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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/773,243	01/31/2001	Thomas Henry Tichy	CTS-1999	6147

7590 05/17/2004

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EXAMINER	
SHAPIRO, LEONID	

ART UNIT	PAPER NUMBER
2673	18

DATE MAILED: 05/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/773,243	TICHY ET AL.	
	Examiner	Art Unit	
	Leonid Shapiro	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12,15,16,18 and 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12,15,16,18 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. In view of the Appeal Brief filed on 02-09-04, PROSECUTION IS HEREBY REOPENED. Rules set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seffernick et al. (US Patent No. 5,966,117) in view of Amano et al. (US Patent No. 6,241,684 B1).

As to claim 1, Seffernick et al. teaches an apparatus for a cursor control device comprising: a cursor control mechanism (See Fig. 3, items 12, 30, in description see Col. 3, Lines 24-34); the substrate coupled to the cursor control mechanism (See Fig.

1, item 14, in description See Col. 4, Lines 41-46), the cursor control mechanism providing a Z-axis output signal in response to being actuated by an operator and control circuit sensing the z-axis output signal (See Fig. 4, item 161, in description See Col. 5, Lines 49-55).

Seffernick et al. does not teach a piezo-electric material mounted on a semi-rigid substrate, a control circuit electrically interconnected to the piezo-electric material for providing signal to cause the piezo-electric material to vibrate in response to the z-axis output signal; and piezo-electric material adapted to vibrate for a predetermined period of time.

Amano et al. teaches a tactile feedback (See Col. 43, Lines 7-9) by attaching a piezo-electric material on semi-rigid substrate (thin layer (70 micron) of the metal bottom surface of the main body) (See Figs. 14, 28, item 14, Col. 43, Lines 1-4), a control circuit electrically interconnected to the piezo-electric material for providing signal to cause the piezo-electric material to vibrate in response (See Figs. 2, 17 items 22, 24-25, 207, Col. 8, Lines 43-49, Col. 20, Lines 45-65 and Col. 43, Lines 4-7); and piezo-electric material adapted to vibrate for a predetermined period of time (See Col. 7, Lines 24-26 and Col. 43, Lines 7-9). Notice, that alarm or sound maker in Amano et al. reference using a vibration which relies on tactile perception (See Fig. 2, items 201, 207, Col. 8, Lines 43-49).

It would have been obvious to one of ordinary skill in the art at the time of the invention to attach piezo-electric material on thin layer of substrate (semi-rigid substrate) and use tactile alarm as shown by Amano et al. in Seffernick et al. apparatus

to response to Z-axis output signal in order to provide tactile feedback (See Col. 8, Lines 43-49 and Col. 42, Lines 52-56 in Amano et al. reference).

As to claims 3-6, Amano et al. teaches a tactile feedback (See Col. 43, Lines 7-9) by attaching a piezo-electric material on semi-rigid substrate (thin layer (70 micron) of the metal bottom surface of the main body) (See Figs. 14, 28, item 14, Col. 43, Lines 1-4).

Amano et al. does not show the substrate made from semi-rigid material as an alumina, an additional piezo-electric wafer, a ceramic material.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use different materials as an alumina, an additional piezo-electric wafer, a ceramic material in Seffernick et al. apparatus in order to provide tactile feedback (See Col. 8, Lines 43-49 and Col. 42, Lines 52-56 in Amano et al. reference). Such a modification in material usage would have been considered a mere design consideration which fails to patentably distinguish over the prior art of the record.

3. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seffernick et al., and Amano et al. as applied to claim 1 above, and further in view of Saarmaa et al. (Pub. N0.: US 2001/0005108 A1).

Seffernick et al., and Amano et al. do not show piezo-electric material comprises a plurality of layers of piezo-electric material.

Saarmaa et al. teaches the piezo-electric material comprises a plurality of layers of piezo-electric material (See in Description paragraph 0052).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use piezo-electric material comprises a plurality of layers of piezo-electric material as shown by Saarmaa et al. in Seffernick et al. apparatus in order to provide tactile feedback (See in Description of Saarmaa et al. reference paragraph 0055).

4. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seffernick et al., and Amano et al. as aforementioned in claims 1, 4 and 6 in view of Barber et al. (US Patent No. 5,973,6700).

Amano et al teaches the control circuit providing control signal to cause the piezo-electric material to vibrate in response to the indicating signal (See Figs. 2, 17 items 22, 24-25, 207, Col. 8, Lines 43-49, Col. 20, Lines 45-65 and Col. 43, Lines 4-7).

Seffernick et al., and Amano et al. do not show an indicating circuit for providing an indicating signal when the cursor is placed over the active area on a display.

Barber teaches an indicating circuit for providing an indicating signal when the cursor is placed over the active area on a display (See Fig. 1, items 32,34, in description See from Col. 3, Line 66 to Col. 4, Line 29).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use an indicating circuit for providing an indicating signal when the cursor is placed over the active area on a display as shown by Barber et al. in Seffernick et al., and Amano et al. apparatus in order to provide tactile feedback.

5. Claims 10-11, 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barber et al. in view of Sefferenick et al. and further in view of Seffernick et al., and Amano et al.

As to claim 10, Barber et al teaches a computer input system comprising: a computer (See Fig. 1, item 16); a cursor control device electrically controlled to the computer (See fig. 1, item 14); software for determining a cursor position based upon user actuation of the cursor control device display (See Fig. 1, items 32,34, in description See from Col. 3, Line 66 to Col. 4, Line 29).

Barber does not show the cursor control device further comprising: an x, y, z axis sensor system.

Seffernick et al. teaches an x, y, z axis sensor system (See Fig. 3, items 12, 30, in description see Col. 3, Lines 24-34); the substrate coupled to the cursor control mechanism (See Fig. 1, item 14, in description See Col. 4, Lines 41-46).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use an x, y, z axis system as shown by Seffernick et al. in Barber et al. apparatus and develop software determining a condition requiring tactile feedback in order to provide a pointing stick for controlling the positioning, movement and operation of a cursor on the display screen (See Col. 3, Lines 21-23 in Seffernick et al. reference).

Barber et al. and Seffernick et al. do not teach a piezo-electric material mounted on a semi-rigid substrate, an electrical circuit for generating a predefined signal, an electrical interconnection between the computer and the piezo-electric material for providing signal to cause the piezo-electric material to vibrate upon

activation by the predefined electrical signal; the piezo-electric material providing tactile feedback to the user when activated by a predefined electrical signal; software determining a condition requiring tactile feedback and providing the predefined electrical signal to the piezo-electric material; and piezo-electric material adapted to vibrate for a predetermined period of time.

Amano et al. teaches a tactile feedback (See Col. 43, Lines 7-9) by attaching a piezo-electric material on semi-rigid substrate (thin layer (70 micron) of the metal bottom surface of the main body) (See Figs. 14, 28, item 14, Col. 43, Lines 1-4), an electrical circuit for generating a predefined signal (See Fig. 17, items 24-25, Col. 20, Lines 46-67); an electrical interconnection between the computer and the piezo-electric material for providing signal to cause the piezo-electric material to vibrate upon activation by the predefined electrical signal (See Figs. 2, 17 items 22, 24-25, 207, Col. 8, Lines 43-49, Col. 20, Lines 45-65 and Col. 43, Lines 4-7); the piezo-electric material providing tactile feedback to the user when activated by a predefined electrical signal (See Col. 43, Lines 7-9); software determining a condition requiring tactile feedback and providing the predefined electrical signal to the piezo-electric material (See Figs. 2, 17, items 201, 207, 24-25, Col. 7, Lines 24-26 and Col. 8, Lines 43-49); and piezo-electric material adapted to vibrate for a predetermined period of time (See Col. 7, Lines 24-26 and Col. 43, Lines 7-9). Notice, that alarm or sound maker in Amano et al. reference using a vibration which relies on tactile perception (See Fig. 2, items 201, 207, Col. 8, Lines 43-49).

It would have been obvious to one of ordinary skill in the art at the time of the invention to attach piezo-electric material on thin layer of substrate (semi-rigid substrate) and use tactile alarm as shown by Amano et al. in Seffernick et al. and Barber apparatus in the cursor control device in order to provide tactile feedback (See Col. 8, Lines 43-49 and Col. 42, Lines 52-56 in Amano et al. reference).

As to claim 11, Amano et al. teaches the predefined electrical signal is an AC signal (See Col. 43, Lines 4-8).

As to claims 15, Seffernick et al. teaches the cursor control device is a pointing stick (See Fig. 5, item 10, in description See Col. 2, Lines 14-16).

As to claims 16, Barber et al. teaches a mouse as the cursor control device (See Fig. 2, item 36, Col. 4, Lines 30-35).

6. Claims 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Amano et al., Seffernick et al. and Barber as applied to claim 12 above, and further in view of Woodart et al. (US Patent No. 6, 259, 188 B1).

Amano et al., Seffernick et al. and Barber do not show an AC signal is at least 20 volts peak to peak.

Woodard et al. teaches an AC signal is at least 20 volts peak to peak (See Fig. 1A, item 32, in description See col. 4, Lines 5-18) with a frequency of at least 300 Hz (See Fig. 1A, item 32, in description See col. 3, Lines 52-57).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use 20 volt signal as shown by Woodard et al. in Amano et al., Seffernick et

al. and Barber apparatus in order to provide an alert apparatus (See Col. 1, Lines 46-47 in Woodart et al. reference).

7. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seffernick et al. in view of Amano et al. and Culler (US Patent No. 6,545,666 B1).

As to claim 18, Seffernick et al. teaches an apparatus for a cursor control device comprising: a cursor control device for providing a desired cursor movement (See Fig. 3, items 12, 30, in description see Col. 3, Lines 24-34) and See Fig. 1, item 14, in description See Col. 4, Lines 41-46).

Seffernick et al. does not teach a piezo-electric assembly operable as a source of vibration, a control device for sensing a predefined condition and providing an electrical signal to activate the piezo-electrical assembly; and wherein the piezo-electric assembly is mechanically coupled to thecursor control device to deliver the vibration.

Amano et al. teaches a tactile feedback (See Col. 43, Lines 7-9) by attaching a piezo-electric material on semi-rigid substrate (thin layer (70 micron) of the metal bottom surface of the main body) (See Figs. 14, 28, item 14, Col. 43, Lines 1-4), a control device for sensing a predefined condition (See Fig. 2, items 201, 207, Col. 8, Lines 43-49) and providing signal to activate the piezo-electric assembly and wherein the piezo-electric assembly is mechanically coupled to alarm to deliver the vibrations to a user (See Figs. 2, 17 items 22, 24-25, 207, Col. 8, Lines 43-49, Col. 20, Lines 45-65 and Col. 43, Lines 4-7); and piezo-electric material adapted to vibrate for a predetermined period of time in response to detecting the electrical signal generated by the control device

(See Col. 7, Lines 24-26 and Col. 43, Lines 7-9). Notice, that alarm or sound maker in Amano et al. reference using a vibration which relies on tactile perception (See Fig. 2, items 201, 207, Col. 8, Lines 43-49).

It would have been obvious to one of ordinary skill in the art at the time of the invention to attach piezo-electric material on thin layer of substrate (semi-rigid substrate) and use tactile alarm as shown by Amano et al. in Seffernick et al. apparatus as a cursor control device deactived for predetermined time in order to provide tactile feedback (See Col. 8, Lines 43-49 and Col. 42, Lines 52-56 in Amano et al. reference).

Seffernick et al. and Amano et al. do not show an input suppression module coupled to the cursor control device, the input suppression module adapted to deactivate in response to detecting the electrical signal generated by a control device.

Culler teaches suppression module blocking cursor movement input from a corresponding mouse-type input device during the period the stepper enable (See Fig. 3, items 302, 306, Col. 5, Lines 57-61).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a suppression module blocking cursor movement input during the period the stepper enable as shown by Culler in Seffernick et al. and Amano et al. apparatus and method as suppression module coupled to the cursor control device during tactile feedback in order to prevent movement information provided by a mouse-type input device from influencing movement (See Abstract in the Culler reference).

As to claim 19, Seffernick et al. teaches a method for a cursor control device comprising the following steps: providing a cursor control device (See Fig. 3, items 12,

30, in description see Col. 3, Lines 24-34) and See Fig. 1, item 14, in description See Col. 4, Lines 41-46).

Seffernick et al. does not teach a piezo-electric assembly operable as a source of vibration, a control device for sensing a predefined condition and providing an electrical signal to activate the piezo-electrical assembly; and wherein the piezo-electric assembly is mechanically coupled to the cursor control device to deliver the vibration.

Amano et al. teaches a tactile feedback (See Col. 43, Lines 7-9) by attaching a piezo-electric material on semi-rigid substrate (thin layer (70 micron) of the metal bottom surface of the main body) (See Figs. 14, 28, item 14, Col. 43, Lines 1-4), a control device for sensing a predefined condition for which tactile feedback is desired (See Fig. 2, items 201, 207, Col. 8, Lines 43-49) and providing signal to activate the piezo-electric assembly and wherein the piezo-electric assembly is mechanically coupled to alarm to deliver the vibrations to a user (See Figs. 2, 17 items 22, 24-25, 207, Col. 8, Lines 43-49, Col. 20, Lines 45-65 and Col. 43, Lines 4-7); and piezo-electric material adapted to vibrate for a predetermined period of time in response to detecting the electrical signal generated by the control device (See Col. 7, Lines 24-26 and Col. 43, Lines 7-9). Notice, that alarm or sound maker in Amano et al. reference using a vibration which relies on tactile perception (See Fig. 2, items 201, 207, Col. 8, Lines 43-49).

It would have been obvious to one of ordinary skill in the art at the time of the invention to attach piezo-electric material on thin layer of substrate (semi-rigid substrate) and use tactile alarm as shown by Amano et al. in Seffernick et al. method as a cursor control device enabled and disabled for predetermined time in order to provide

tactile feedback (See Col. 8, Lines 43-49 and Col. 42, Lines 52-56 in Amano et al. reference).

Seffernick et al. and Amano et al. do not show an input suppression module coupled to the cursor control device, the input suppression module adapted to deactivate in response to detecting the electrical signal generated by a control device.

Culler teaches suppression module blocking cursor movement input from a corresponding mouse-type input device during the period the stepper enable (See Fig. 3, items 302, 306, Col. 5, Lines 57-61).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a suppression module blocking cursor movement input during the period the stepper enable as shown by Culler in Seffernick et al. and Amano et al. method disabling and enabling the cursor control device in order to prevent movement information provided by a mouse-type input device from influencing movement (See Abstract in the Culler reference).

Response to Amendment

8. Applicant's arguments filed in Appeal Brief on 02-09-04 with respect to claims 1, 3-12, 15-16, 18-19 have been considered but are moot in view of the new ground(s) of rejection.

Telephone inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 703-305-5661. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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VIJAY SHANKAR
PRIMARY EXAMINER